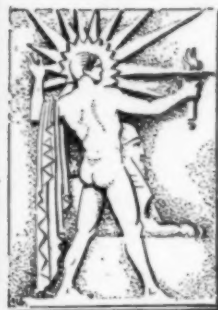


JAN 10 1929



SCIENCE NEWS-LETTER

The Weekly Summary of Current Science

A SCIENCE SERVICE PUBLICATION



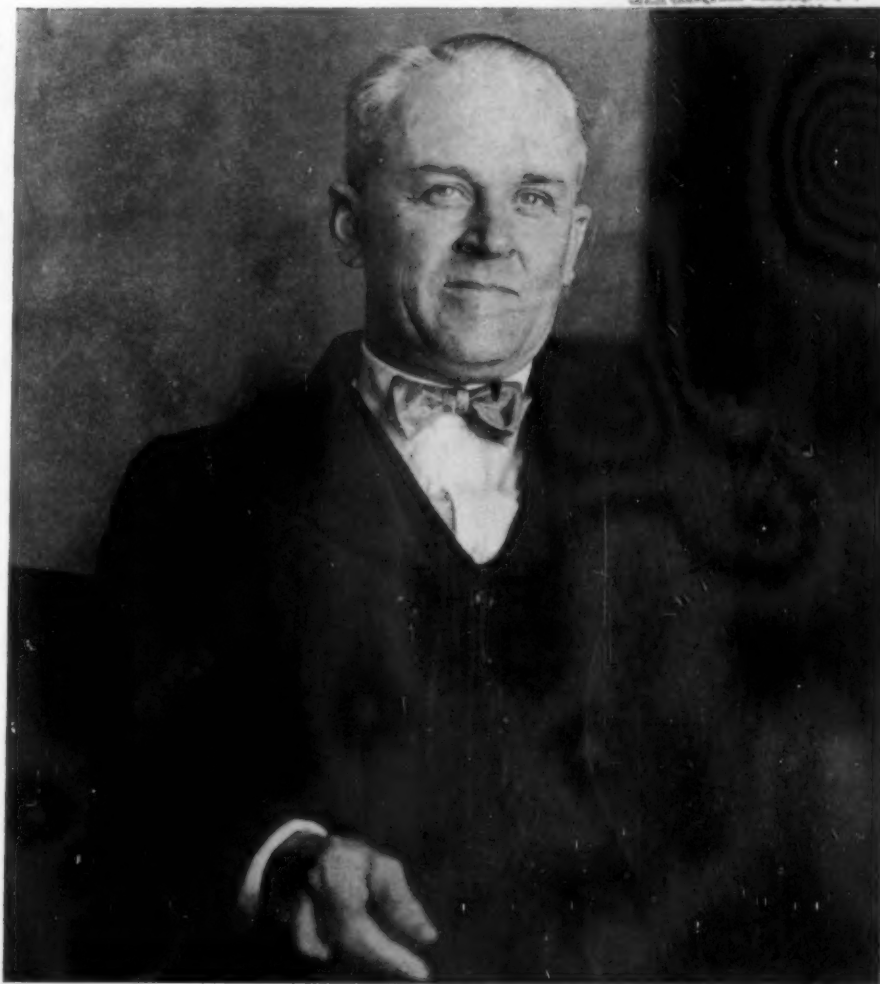
\$5 a year

15c a copy



Jan. 5, 1929

PERIODICAL ROOM
GENERAL LIBRARY



ROBERT ANDREWS MILLIKAN

New President of America's Largest Science Organization

(See page 2)

Vol. XV

No. 404

A. A. A. S. Elects

History of Science

At the recent New York meeting of the American Association for the Advancement of Science Robert Andrews Millikan, director of the Norman Bridge Laboratory of Physics of the California Institute of Technology, Pasadena, was named president of the Association for the ensuing year.

Dr. Millikan, recipient of the Nobel prize for his pre-eminent work in physics, has been most conspicuously before the public eye lately because of his researches on the highly penetrating short-wave radiations which have been given the popular name "cosmic rays". To physicists, however, he is known even better as a versatile and successful worker in the fields of electricity, radiant energy and the newer atomic mechanics. He received his training at Oberlin, Columbia, Berlin and Göttingen. Until he went to his present post in 1921 he was professor of physics at the University of Chicago.

Other officers named by the Association are as follows: General secretary, F. R. Lillie; permanent secretary, B. E. Livingston; treasurer, J. L. Wirt; auditor, Lyman J. Briggs; members of the council, L. O. Howard, D. T. MacDougal; members of the committee on grants, C. P. Berkeley, C. W. White; members of the executive committee, Vernon Kellogg, E. B. Wilson, K. T. Compton; member of the finance committee, G. K. Burgess; trustee of Science Service, Raymond Pearl.

Sectional vice-presidents and secretaries are as follows: A, E. T. Bell, C. N. Moore; B, C. E. Mendenhall, A. L. Hughes; C, S. C. Lind, R. R. Renshaw; D, Harlow Shapley, Philip Fox; E, G. F. Kay, K. F. Mather; F, C. M. Child, G. T. Hargitt; G, J. Arthur Harris, S. F. Trelease; H, A. V. Kidder, C. H. Danforth; I, Madison Bentley, E. S. Robinson; K, H. L. Rietz, C. F. Roos; L, Henry O. Taylor, Leonard Bloomfield (Subsection on Linguistics), Joseph Mayer (Subsection on Historical Sciences); M, H. F. Moore, N. H. Heck; N, Ludvig Hektoen, E. V. Cowdry; O, M. F. Miller, P. E. Brown; P, F. N. Freeman, W. L. Uhl.

Science News-Letter, January 5, 1929

A nation-wide movement has been launched to put signs on the roofs of certain buildings in every town and city to guide aviators.

Elements' Decay Described

Chemistry

How the actual disintegration of one element to another, the goal sought in vain by the ancient alchemists, has been found to be continually occurring without human aid, and has opened a new domain in science, was explained by Prof. A. A. Noyes. Prof. Noyes is the director of the Gates Chemical Laboratory of the California Institute of Technology, and he spoke as retiring president of the American Association for the Advancement of Science.

Thirty years ago, said Dr. Noyes, about a dozen of the 89 chemical elements had not been discovered. Today all are known except three. Then atoms were supposed to look like small solid balls and to be indestructible. Today they are known to resemble miniature solar systems. Some, like those of radium, are found to be disintegrating spontaneously into simpler elements, while others

can be made to disintegrate by bombarding them with helium particles.

Helium itself, now prepared in quantity large enough to fill huge dirigibles, was discovered in 1895. Since that time, it has been found that helium nuclei are probably building stones in the construction of the other atoms.

Dr. Noyes showed by ingenious models how helium nuclei, themselves first formed of protons, which are hydrogen nuclei, and electrons, unite with one another and with more protons and electrons to produce the nuclei of more complex atoms.

The natural breaking up of radium with emission of helium into a series of elements which finally forms lead, all of which has been discovered within the past 30 years, was cited by Dr. Noyes as further proof of the way atoms are built.

Science News-Letter, January 5, 1929

In This Issue—

The Association Elects, p. 2; How Science Was Revolutionized, p. 2—Toward Biological Peace, p. 3—Heredity and Glands, p. 3—Masculinized Biddies, p. 3—Super-Universes, p. 5—Planet Bigger Than Its Sun, p. 6—Rock-Pecking, p. 7.



SCIENCE NEWS-LETTER, The Weekly Summary of Current Science. Published by Science Service, Inc., the Institution for the Popularization of Science organized under the auspices of the National Academy of Sciences, the National Research Council and the American Association for the Advancement of Science.

Edited by Watson Davis.

Publication Office, 1918 Harford Ave., Baltimore, Md. Editorial and Executive Office, 21st and B Sts., N. W., Washington, D. C. Address all communications to Washington, D. C. Cable address: Scienserve, Washington.

Entered as second class matter October 1, 1926, at the postoffice at Baltimore, Md., under the act of March 3, 1879. Established in mimeographed form March 13, 1922. Title registered as trade-mark, U. S. Patent Office.

Subscription rate—\$5.00 a year postpaid. 15 cents a copy. Ten or more copies to same address, 5 cents a copy. Special reduced subscription rates are available to members of the American Association for the Advancement of Science.

Advertising rates furnished on application.

Copyright, 1928, by Science Service, Inc. Reproduction of any portion of the SCIENCE NEWS-LETTER is strictly prohibited since it is distributed for personal, school, club or library use only. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicate services issued by Science Service, details and samples of which will be gladly sent on request.

INTERPRETING week by week, the latest developments in the various fields of science, this magazine attempts also to present its articles in the most pleasing and readable typography and the most convenient arrangement.

The clippability, indexing, and automatic dating of each article are unique features.

This is a separable magazine. Each original article can be clipped or torn out without losing or damaging another important article on the other side. These original articles are backed by reprinted quotations or excerpts, short one-sentence items, advertisements, and other material not likely to be clipped and preserved.

Each article is automatically indexed by the key word printed in italics just below the heading, or at the end of the article when the article has no heading. Articles can thus be filed easily into any system of classification, whether it be Library of Congress, Dewey, or one of the reader's own devising.

Each article is automatically dated by its last line.

All of the resources of Science Service, with its staff of scientific writers and correspondents in centers of research throughout the world, are utilized in the editing of this magazine.

The Path to Peace in Biological Thinking

Zoology

Following are further reports on papers on the zoological sciences, presented at the New York meeting of the American Association for the Advancement of Science.

The two warring schools of thought in theoretical biology, the mechanists and the historians, were shown the path to peace in an address by Prof. William Morton Wheeler, of Harvard University.

Mechanists are those who hold that all the activities of living beings can be explained on the last analysis in terms of the mechanics of physics and chemistry. Historists are those who hold the opposing doctrine that there is something more about the life of a plant or animal than physics and chemistry in the ordinary sense of the terms.

Both schools have gone astray, Prof. Wheeler indicated, through mistakes of their own making. The mechanists have had a trick played on them by the new physics which has about destroyed our old ideas about mechanics. In Prof. Wheeler's phrase: "While they were prostrating themselves before Mechanism, some of the more bolshevistic physicists very stealthily carried it off and dropped it into the sea."

In Peril of Metaphysics

The historians, on the other hand, have floundered into bogs of metaphysics and speculative philosophy, and have tried to insert "entelechies," "vital drives" and other spooks of various kinds into their animals and plants to make them go. And no biological research has so far given any evidence for the real existence of such things.

The real meeting ground for the opposing ways of thinking, Prof. Wheeler declared, is to be found in such biological thinking as is represented by Gen. Smuts' "holism," in the ideas of "emergent evolution," "organicism" or "organismalism." The thinkers who have advanced these ideas see a plant or animal not as a mere mechanism, nor yet as something driven by a pseudo-supernatural force from within; but regard an organism as something in itself, developing qualities from the combination of elements that go to make it up which these elements do not have in the separated state, and which they can possess only in the particular combination in which they are found in each special case.

Races of pigeons in his cages at Cold Spring Harbor, Long Island, show by the abnormally enlarged or diminished size of two of their internal glands how unusual characters or traits can become a fixed part of inheritance, according to Dr. Oscar Riddle of the Carnegie Institution's Station for Experimental Evolution.

"Few questions are of more lively interest to many humans than that of the nature and source of racial differences among men," said Dr. Riddle. "Knowing that nothing remains fixed and unchanged in the living world the mind of man asks whether human races are to become still more different. And further, sensing that the spirit of modern biological science asserts itself in an increasing control of the phenomena of life, the same mind asks whether these racial differences are also to yield to scientific control.

"The following facts supply a partial background for the biological answer to these questions. During several years it has been known that the growth of the body and the differentiation of physical traits in man and higher animals are in considerable degree controlled by the glands of internal secretion. But whether these controllers have a truly hereditary basis—such as will permit the application of the principles of breeding to these traits—has not hitherto been proved. Such proof is now supplied for one of these endocrine organs, the thyroid.

"The results of this investigation show that in ring doves four races with large thyroids and at least four races with small thyroids have now been established. Through four to six generations the healthy individuals of these races or strains have satisfactorily maintained their thyroid size at a characteristic level. It is thought that the numerous difficulties attending a study of the heritability of thyroid size have been adequately eliminated in our study of 24 strains of ring doves.

"The fact that 'thyroid races' have been formed is in itself good evidence that genetic factors for thyroid size do exist. The final and conclusive evidence has now been obtained from seven years of study of the behavior of thyroid size in crosses of the various breeds previously proved to have thyroids of

different and characteristic size. Large thyroid crossed with large thyroid yields large thyroids in the first generation. Small thyroid crossed with small thyroid gives small thyroids in their offspring. Large thyroid crossed with small or intermediate thyroid gives thyroids of intermediate size in the first generation. Some further evidence is obtained from smaller numbers of second, third and fourth generations.

"Much smaller evidence indicates that the size of the pituitary gland is similarly inherited. The successful study of these two organs gives a fuller understanding, and increased means of control, of such human traits as stature, size of jaw, length of limb, shape of head, and texture of skin and hair."

Hens Changed to Roosters

Crowing hens adorned with cocks' feathers and spurs are occasional natural nine-days'-wonders in the farmyard. Now they have been produced to order by Dr. A. V. Domm of the University of Chicago, who reported on his surgical sex-reversal operations.

Dr. Domm operated on 175 female chicks during the first 30 days after their hatching, in each case removing the left ovary. In fowls this is the only one that normally functions, the right gland degenerating and never producing eggs. The most striking result of the operation was internal, as revealed by microscopic examination of the birds after they had been killed. The right ovary, left in place, developed into something very much like a male sex gland; in five out of the 175 operated fowl it even contained mature spermatozoa.

Externally practically all of the hens took on the appearance and behavior of males. They grew spurs and rooster plumage, their combs and wattles became like those of the male, they crowed, coaxed their sisters to come for imaginary bits of food, and in general conducted themselves like real lords of the chicken-coop. Ultimately the transformed hens lost their male plumage and resumed typical hen feathers, but in all other respects the changes were permanent. These unsexed gallinaceous ladies remained pseudo-males to the end. (Turn to next page)

Can You "Make Good"?

Here's the premise: For every occupation there is a psychological pattern; it is possible to duplicate the essentials of that pattern in a simple sample of work; and, from the individual's ability to perform that simple task, predict his proficiency in a given occupation.

Proceeding on that premise, JOHNSON O'CONNOR describes in

BORN THAT WAY

a series of work samples or tests—which have demonstrated their ability to predict, through continued application in the great industrial laboratory of the General Electric works at West Lynn.

A book for everyone interested in practical psychology. The teacher in particular will get a new understanding of some of the problems presented by students. The price is \$6.00.

The Calm Truth About a Much Misunderstood Condition

Homosexuality is all but a subject taboo. Result—much misinformation, false judgment, faulty attitude. In

THE INVERT

the subject is discussed with clarity and understanding, because the author is himself an invert. It is written for any who would understand; and with utter freedom from any trace of morbidity. The price is \$2.00.

Man is Living Longer

The sense of doom has been taken from many diseases like small-pox, diphtheria and typhoid. Read how these things have been accomplished in

THE STORY OF MODERN PREVENTIVE MEDICINE

It is by SIR ARTHUR NEWSHOLME and is much more than a "history" of the public health movement. It tells of the tremendous advances in health insurance during the last 50 years; why hospitals are no longer charnel houses; and what and whose discoveries paved the way for the great victories of our times. Read with understanding it shows what we can do to keep well and promote health. \$4.00.

ALL NEW

THE WILLIAMS & WILKINS COMPANY

Publishers of Scientific Books and Periodicals

BALTIMORE, MD., U. S. A.

A.A.A.S. Zoology—Cont'd

Apple orchards lighted like Broadway at night, to induce the plaguing aphids, or "plant lice," to grow wings and fly away to eat something less valuable, may develop out of the newly discovered reason why these destructive insects take to a life of flight disclosed by Prof. A. Franklin Shull of the University of Michigan.

Aphids are noted among insects as extreme feminists. Except at the end of the breeding season there are no males, and the females reproduce the species copiously throughout the summer without mating. There are two kinds of these Adamless Eves among the aphids, one with wings and the other without. The wingless kind is produced in largest numbers early in the season, and since they can not migrate from their host plants they often do immense damage in the spring.

Later on, the proportion of wingless females falls off and winged forms predominate. These scatter, and hence relieve the original host plant. Until now, the reasons for the change from wingless to winged forms were all conjectural, and were thought to have to do with changing temperature, moisture conditions, etc.

Prof. Shull, however, has been able to control the proportions of winged and wingless individuals by breeding his experimental lots of aphids in artificially lighted compartments where the "day" and "night" periods could be regulated at will. Long days and short nights increased the number of winged insects; short days and long nights caused the wingless ones to predominate. Prof. Shull suggested that any means which might be used by orchardists and gardeners to encourage the early production of winged aphids would be to their advantage, because it would cut down the number of these pests on their trees or truck plants at a time when the most harm is usually done.

Science News-Letter, January 5, 1929

A knowledge test of 100 questions has been sent out to graduates of the University of California to determine how long the facts learned at college stay with the students.

It is estimated that the Antarctic region is about 30 degrees colder than the Arctic.

"Super-Universes" Largest Objects

Astronomy

Following are further reports on papers in astronomy, presented at the New York meeting of the American Association for the Advancement of Science.

Large as our galaxy, or "universe" of stars, is—perhaps fifteen hundred million million miles across—there are still larger things scattered around through space. These are the "super-universes," or galaxies of galaxies, said Dr. Harlow Shapley, director of the Harvard College Observatory.

Outside our own galaxy, there are thousands of independent ones. Some of these appear as spiral nebulae, with a definite pin-wheel-like structure. Others, like the two Magellanic clouds, visible to the unaided eye from southern countries, are more irregular. Dr. Shapley himself has demonstrated that the two Magellanic clouds are at vast distances, so far that they are definitely outside our own universe. At the Mount Wilson Observatory Dr. Edwin Hubble has made measurements of the distance of two of the closest of the spiral nebulae. He has proven that they also are outside our galaxy, and are made up, like our own, of a vast number of stars.

"The measures of dimensions show that our own galaxy appears to be from ten to twenty times the diameter of any of the others with which we are acquainted," said Prof. Shapley, "with the exception of the Andromeda nebula, which may be a fifth as large as our system. In the oceans of space, our galaxy appears to be a continent, whereas the hundreds of thousands of extra-galactic nebulae may be called 'island universes,' as Herschel and others termed them a hundred years ago."

But these "islands" are not isolated, Dr. Shapley has discovered.

"They are organized into higher systems—into galaxies of galaxies," he said. "These greater organizations are enormously larger than our own galaxy."

Prof. Shapley told of the studies that he and one of his associates, Miss Adelaide Ames, have been making for the last four years on one of these super-galaxies, the one in the constellations of Coma and Virgo. They studied an area in these constellations of about a hundred square degrees. This is approximately the area contained in a square equal to the apparent distance in the sky between Betelgeuse, the northernmost star in Orion, to the middle of the three stars

that form the warrior's belt. "An analysis of this region has shown that the Coma-Virgo group itself is composed of between two hundred and three hundred galaxies. Lying in the same general direction, though much more remote, are at least three other clouds of galaxies, indicating a scattering of such systems through space as far as we can fathom.

"In analyzing the Coma-Virgo region we hit upon the major discovery of all our work—the apparent proof that inter-galactic space is effectively transparent. This gives us the assurance that the distances we are measuring are correct and that veils of meteoric dust and of electrons cannot obscure the light of remote systems and lead us to false conclusions concerning their distances.

"This will permit us to say with more confidence than we have heretofore admitted that the remotest galaxies we study are more than a hundred million light years distant; that the great Coma-Virgo galaxy of galaxies is ten million light years away and extends throughout two million light years of space; and that the individual systems in this organization have diameters from five to twenty thousand light years (our own galaxy probably much exceeds two hundred thousand light years in diameter). It is possible that an enormous galaxy such as ours may result from the condensation or amalgamation of many smaller galaxies—for instance, from the concentration into one system of a hundred or so of the members of a super-system such as that in Coma-Virgo."

Electric Eye Sees Stars

How the electric eye, the photoelectric cell that makes television possible, can be used for measuring the light of stars was explained by Dr. Joel Stebbins, of the Washburn Observatory at Madison, Wis.

"A star image is focused on such a cell by the telescope lens," he said. "and the resulting electrical current gives a measure of the amount of light received.

"One of the interesting objects studied is the star Epsilon in the constellation of Auriga, known to consist of a bright body and a larger faint companion which revolves around the main star in a period of

twenty-seven years. During the six months since last June the darker body has been slowly moving in front until the bright star is now entirely obscured and we get only the light of the faint component.

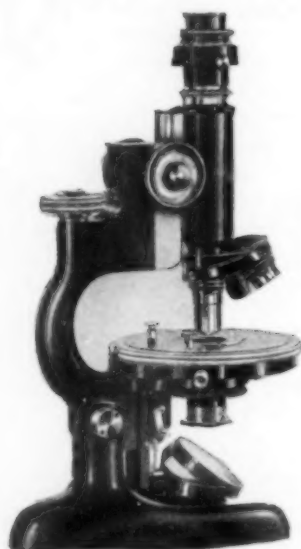
"This total eclipse will continue for about a year, when the bright body will again begin to emerge, and after another six months the system will be of normal brightness. From the long intervals involved in these changes it follows that the companion must be an unusual body; it is a planet larger than its sun, so diffuse that its density cannot be more than one one-hundred-thousandth that of air, and yet it shines like a star. Some of the facts concerning this system have been known heretofore, but it is hoped to secure new data from the present eclipse which affords an opportunity not to be repeated for twenty-seven years."

Tides May Cause Sun Spots

Tides on the sun, caused by the pull of the planets Jupiter and Saturn, may be responsible for the approximately eleven-year period in which the sun-spots wax and wane. This theory, presented about thirty years ago by Prof. E. W. Brown, of Yale University, finds support in evidence presented by Prof. Dinsmore Alter, of the University of Kansas. The sunspot epochs for the past thirty years have almost exactly followed the course predicted in Prof. Brown's paper, he stated.

As the moon revolves around the earth, its gravitational pull attracts the ocean areas to a considerable extent, which is evidenced as the tides. As the mass of the sun is so much greater than that of the earth its own gravitational attraction is very great. With the planets so much farther away than the moon is from the earth, the planetary tides would be very feeble. However, spectrum observations have shown that the atmosphere of the sun is almost in perfect equilibrium. The gravitational force pulling it inward is compensated for by the force of the light pushing it outward. In a body as large as the sun, this radiation pressure is very great. With such an equilibrium, said Prof. Alter, a very slight tidal effect would produce large results. (Turn to next page)

The Chemist's Right-Hand Man



The various types of work peculiar to a chemist demand a microscope possessing all of the characteristics necessary to perform such work. The chemist will find the New B. & L. Chemical Microscope able to answer all of his requirements.

The base, pillar and arm have been redesigned to give more room for the manipulation of the specimen and instruments.

Another feature, the revolving nosepiece containing three objectives, enables a quick change of magnification.

The polarizer and analyzer which enable saving of time, labor and reagents in both organic and inorganic work has been improved to give even better results than before.

The circular revolving stage, with a milled edge graduated on the circumference in single degrees, facilitates locating, measuring and examining the specimen, and recording fields.

Bausch & Lomb Optical Company

697 St. Paul St.

Rochester, N. Y.

A.A.A.S. Astronomy—Cont'd

The poorest radio reception for many years may be expected during the latter half of 1929 because of the large number of spots on the sun due at that time, Prof. Harlan T. Stetson of the Harvard Laboratory of Astronomy predicted when he described three years of researches connecting radio receiving conditions on earth with changes in the atmosphere of the sun.

One of the reasons that radio broadcasting developed so rapidly is that at the time of its rapid growth, about 1923, sun spots were at a minimum and at no time since has radio reception been so favorable, Prof. Stetson explained. Equally good receiving conditions will not return again until the present sun spot cycle terminates in 1934.

The popular impression that radio reception is universally poor in summer and good in winter is "completely unfounded," Prof. Stetson declared. If shortened days and decreased daylight which aid radio were the only factors, the popular idea would be correct, but during the winters of 1926 and 1927 increased activity on the sun made the cold seasons better radio periods than the summers. Decreases in sun spots during the last two months of this year have improved receiving conditions greatly. Prof. Stetson explained that static due to thunder storms in summer causes the average radio listener to decrease his set's sensitivity and thus appear erroneously to get low signal intensity in warm weather.

A definite fourteen to fifteen month period in both radio and solar activity was discovered by Prof. Stetson's researches conducted in cooperation with Greenleaf W. Picard of Newton Center, Mass. One of these secondary maxima falling due next September or October and coinciding with the longer sunspot cycle of about eleven years will probably make the sun more spotted and the radios more unhappy than they have been for years.

Science News-Letter, January 5, 1929

A remarkable looking experiment in modern architecture is a church built in Cologne, Germany, made entirely of steel, copper, and colored glass.

A German engineer is planning a huge indoor beach, with sand, an "ocean", a boardwalk, and lamps furnishing artificial sunlight.

First Glances at New Books

EMOTIONS OF NORMAL PEOPLE—William Moulton Marston—*Harcourt, Brace* (\$5.50). A new theory of emotions worked out on a neurological basis, leading to the conclusion that motor-consciousness is affective consciousness. Because the literary names popularly used for emotions, such as fear and anger, are overlapping and often confusing, this psychologist has abandoned them, and uses instead as the four building stones for emotional patterns dominance, compliance, inducement and submission. With these he builds up more complex attitudes and responses in normal and abnormal behavior. The difficult task of presenting an entirely new organization of this particular field of psychology is comprehensively and carefully handled.

Psychology

Science News-Letter, January 5, 1929

COMMON SENSE IN EDUCATION—Bernard Iddings Bell—*Morrow* (\$2.50). Parents are the readers to whom this well-written book is primarily addressed, but it is recommended for any one who feels hazy as to what modern education is all about. Chapters are devoted to public schools, private schools and to colleges, and there are two chapters on religious education, one dealing with younger children and one with under-graduates. For technical information, which this book wisely touches upon sparingly, the reader is referred to a comprehensive book list.

Education

Science News-Letter, January 5, 1929

THIS ADVERTISING BUSINESS—Roy S. Durstine—*Scribners* (\$3). It is probable that this will not be listed in *Psychological Abstracts*, but there is material for psychologists, scientific and business, in it. Those who do not understand the making of modern business today should read it.

Business

Science News-Letter, January 5, 1929

FOOD INFECTIONS AND FOOD INTOXICATIONS—Samuel Reed Damon—*Williams and Wilkins* (\$4). The difference between food infections and food intoxications is brought out, and causes, symptoms, treatment and means of prevention are described. The book will be extremely valuable for reference for food chemist and bacteriologist as well as for physician and nutrition worker.

Medicine

Science News-Letter, January 5, 1929

THE EPIC OF GILGAMISH—R. Campbell Thompson—*Luzac and Co., London* (10/6). A new, exact translation of one of the world's oldest dramatic poems, made from cuneiform tablets in the British Museum, dating back to 700 B. C. The adventures of the tyrant Gilgamish in Babylonia were first told about 4000 B. C., or perhaps earlier, and their interest still holds. The poem has a theme of the quest for youth and escape from death. There are love affairs and magic potions, and dealings with gods and goddesses, all ending finally with the despair of Gilgamish at his failure to conquer life and death.

Archæology

Science News-Letter, January 5, 1929

THE TURKISH ORDEAL—Halidé Edib—*Century Co.* (\$4). A stirring account of recent political developments in Turkey is found in this volume. The book is sufficiently interesting and dramatic to appeal to all readers. Those who make a study of social and political conditions will be especially interested in this account by the woman who has been called Turkey's Jane Addams.

Sociology

Science News-Letter, January 5, 1929

ELEMENTS OF PHYSIOLOGY—Ernest G. Martin and Frank W. Weymouth—*Lea and Febiger* (\$8). This textbook of physiology is designed for medical students and students of advanced biology. It is planned to give the students all elementary facts and principles and to stimulate them into becoming familiar with the literature, including original experimental publications, outside their textbook.

Physiology

Science News-Letter, January 5, 1929

SUNLIGHT THE HEALTH GIVER; HEADACHES; "JUST A COLD?" OR—Metropolitan Life Insurance Co. These three pamphlets, which are up to the usual standards of the Metropolitan Life Insurance Co., are issued by the Welfare Department and will be sent in limited quantities for use in connection with definite health activities.

Hygiene

Science News-Letter, January 5, 1929

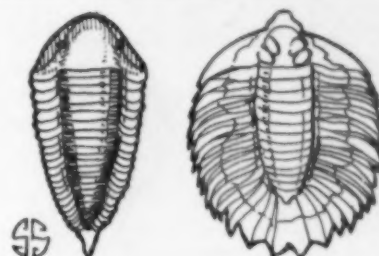
THE BASIS OF MEMORY—W. R. Bousfield—*Norton* (\$1). Challenges Semon's theory that memory is founded on changes in the brain structure, and upholds McDougall's theory of "psychical structure".

Psychology

Science News-Letter, January 5, 1929

NATURE RAMBLINGS

BY FRANK THONE



Rock-Pecking

Winter walks, giving us less to do in watching flower and bird and scampering small animal, leave us more time to consider things that are none the less interesting because they lie still and do not breathe.

If you will scratch or hammer among the layers of limestone or shale, in all manner of places, you will often uncover things that once breathed, though they now lie very still. Fossil-hunting is one of the most fascinating of sports to follow on a mild winter's day.

And among the most fascinating of fossils to uncover are trilobites. Most rocks that yield them at all yield them in quantity, so that a couple of hours' woodpecker work will fill a pocket. It is very much like hunting under bark for beetles, except that stone is usually more stubborn than bark, while on the other hand the trilobite fossils never try to escape. Though at that they may penalize an unskillful hammer-stroke by turning up broken.

Trilobites were the ancestors, probably, of all our swarming many-legged forms of life of both land and water. They were primitive crustaceans, relatives of lobsters and crayfish, that lived in the seas when the world was so young that no geologist likes to be asked how many millions of years ago it was. Cambrian, Ordovician, Silurian—those are dates enough on his calendar, and he feels that they should suffice for yours, too. Anyhow, they are the real dates for fossils; years in six-figured arrays really mean nothing in geology.

Science News-Letter, January 5, 1929

Because the United States has a growing number of cities with populations greater than some entire states, it has been predicted that eventually such metropolises will have to become independent city states if they are to have efficient government.

East and West Converse

Linguistics

MAURICE PARMELEE, in *Oriental and Occidental Culture* (Century):

When I wanted my rickshaw coolie to hasten, I would say "you chop-chop go", and he would usually reply "can do" or "no can do". This is "Pidgin-English", which, like the "lingua franca" of the Levant, is used from Japan to India and in Oceania as a means of communication between the natives and foreigners. It is a jargon based upon English, with a picturesque intermixture of Chinese, Hindustani, Portuguese, French, etc. The word "pidgin" is said to have been derived as follows: business—busin—pishin—pidgin. This hybrid language evolved largely in Canton and along the Chinese coast during the early days of trade with the West.

"Chop-chop", from the Cantonese, in "chop-sticks" means to hasten eating. "Chow" in Cantonese means dinner or a feast, and in pidgin, food, while "chow-watta" is drinking water. "Chin-chin" is Chinese for "please" and becomes a greeting in pidgin. "Chin-chin joss" is to worship, "joss" coming from the Portuguese "dios".

"Compradore" for middleman between foreign and native merchants also came from Portuguese. "Savey" for to know came from French, and in Indo-China wine is "encore", indicating a frequent use of this beverage. Through employees of the East India Company came from Hindi "bund" (bund is an embankment or dike) for a boulevard fronting on water, "punka" for genuine, and "griffin" for a new arrival in the Orient or a young racing pony. Luncheon is always "tiffin" even for foreigners among themselves, and a message is a "chit".

The missionary is graphically described as "number-one-go-to-heaven-man", and in Oceania God becomes "big masta fella". To read is "look book". "What side" is where, "catchee" is to get, and "no plenty" is few. "What time" is when, "all time" is always, and "bimeby" is soon. The verb is conjugated as follows: "me go", I go; "bimeby me go", I will go; "me go finish", I went.

The letter "r" is little used by the Chinese and therefore becomes "l",

while the letter "d" is also difficult to pronounce. The butler announces dinner to his mistress as "chow-chow alle leady, missee". "Fly lice" for fried rice, and "slow-belly" for strawberry are at first somewhat distasteful. A table-boy (waiter) apologizes for a broken egg with "me velly solly he bust".

Pidgin-English, which has attained the dignity of a dictionary, has also its literature. The laudable maxim "If at first you don't succeed, try, try again" becomes "S'pose some ting you no can do, then do him till you could".

Science News-Letter, January 5, 1929

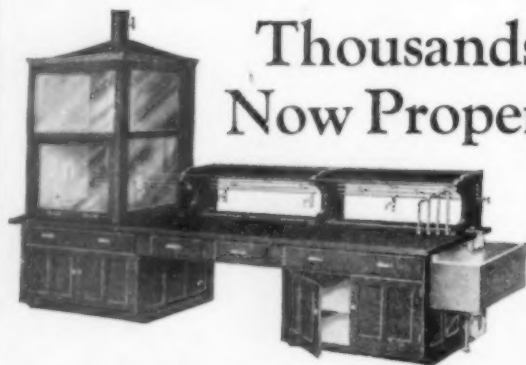
MICROSCOPY

Instruction—evening classes now forming. Construction, manipulation, illumination, accessories, practical methods of slide making.

For particulars address

CHARLES P. TITUS

Room 1501 Pershing Square Bldg.
New York City



Thousands of Schools Now Properly Equipped to Teach Science

The past few years have witnessed a wonderful transformation in the Laboratory Equipment of the Schools and Colleges of America.

Hundreds of new schools have been built—and in most of them—as well as in hundreds of old schools—Kewaunee Laboratory Furniture has been installed.

There Is No Substitute For Experience

The manufacture of Science Furniture, Vocational Furniture, Mechanical, Art and Drawing Tables, and Library Furniture is our special line. Our plant is especially equipped for this line of manufacturing. Our engineering, planning, and educational research departments offer our complete service to architects, school boards and school representatives, without charge.

We are anxious to send full information about good Laboratory Furniture to any Science instructor. Just ask for a copy of the Kewaunee Book. Address all inquiries to the home office at Kewaunee.

Kewaunee Mfg. Co.
LABORATORY FURNITURE EXPERTS

C. G. CAMPBELL, Pres. and Gen. Mgr.
206 Lincoln St., KEWAUNEE, WIS.

CHICAGO OFFICE:
25 E. Jackson Blvd.
Room 1511

OFFICES IN PRINCIPAL CITIES

NEW YORK OFFICE:
70 Fifth Ave.

Staff of Science Service—Director, Edwin E. Slosson; Managing Editor, Watson Davis; Staff Writers, Frank Thone, James Stokley, Emily C. Davis, Jane Stafford; Librarian, Minna Gill; Sales and Advertising Manager, Hallie Jenkins.

Board of Trustees of Science Service—Honorary President, William E. Ritter, University of California. Representing the American Association for the Advancement of Science, J. McKeen Cattell, President, Editor, Science, Garrison, N. Y.; Raymond Pearl, Director of the Institute of Biology, the Johns Hopkins University, Baltimore, Md.; M. I. Pupin, Professor of Electromechanics, Columbia University, New York City. Representing the National Academy of Sciences, John C. Merriam, President, Carnegie Institution of Washington; R. A. Millikan, Director, Norman Bridge Laboratory of Physics, California Institute of Technology, Pasadena, Calif.; Dr. David White, Senior Geologist, U. S. Geological Survey. Representing National Research Council, Vernon Kellogg, Vice-President and Chairman of Executive Committee, Permanent Secretary, National Research Council, Washington, D. C.; O. G. Abbot, Secretary, Smithsonian Institution, Washington, D. C.; Harrison E. Howe, Editor of Industrial and Engineering Chemistry. Representing Journalistic Profession, John H. Finley, Associate Editor, New York Times; Mark Sullivan, Writer, Washington, D. C.; Marlen E. Pew, Editor of Editor and Publisher, New York City. Representing E. W. Scripps Estate, Harry L. Smithson, Treasurer, Cincinnati, Ohio; Robert P. Scripps, Scripps-Howard Newspapers, West Chester, Ohio; Thomas L. Sidle, Cleveland, Ohio.